

### **REMARKS**

Upon entry of this Amendment, claims 1, 3, 4, 6-11, and 21-23 remain pending and under current examination. In the Office Action,<sup>1</sup> the Examiner took the following actions;

- (a) objected to the specification;
- (b) rejected claims 1, 2, and 4-7 under 35 U.S.C. § 102(b) as being anticipated by Nakajima et al. (U.S. Patent No. 5,907,188) ("Nakajima"); and
- (c) rejected claims 3 and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over Nakajima as applied to claims 1, 2, and 4-6 and further in view of Hu (U.S. Patent No. 5,962,904) ("Hu").

Applicants traverse the rejections for the following reasons.

#### **Regarding the Amendment to the Specification:**

Applicants have amended the specification, as required by the Examiner, to reflect the present state of U.S. Application No. 09/492,780, which has now issued as U.S. Patent No. 6,737,716. Applicants respectfully request withdrawal of the objection.

#### **Regarding the Claim Amendments:**

Applicants have canceled claims 2 and 5, without prejudice or disclaimer of their subject matter; amended claim 1 to include the elements of canceled claim 5 and to more appropriately define the present invention; amended claims 6-8 to more appropriately define and the present invention; and added new claims 21-23 to protect additional aspects related to the present invention.

---

<sup>1</sup> The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

**Rejection of Claims 1, 2, and 4-7 under 35 U.S.C. § 102(b):**

Applicants traverse the rejection of claims 1, 2, and 4-7 under 35 U.S.C. § 102(b) as being anticipated by Nakajima. The rejection of canceled claims 2 and 5 has been rendered moot. Applicants respectfully disagree with the Examiner's arguments and conclusions.

In order to properly establish anticipation under 35 U.S.C. § 102, the Federal Circuit has held that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). *See also* M.P.E.P. § 2131.

Nakajima does not disclose each and every element of Applicants' claimed invention, despite the Examiner's allegations. Specifically, Nakajima does not disclose at least Applicants' claimed "forming a metal-containing insulating film comprising a metal oxide film or a metal silicate film by oxidizing said metal compound film" (claim 1).

The Examiner alleges that Nakajima discloses "forming a metal-containing insulating film consisting of a metal oxide film or a metal silicate film by oxidizing said metal compound film..." (Office Action, p. 3). Applicants dispute the Examiner's characterization.

Instead, Nakajima discloses that "the silicon substrate 1 is subjected to the oxidation process ... to form an oxide film 4 on the interface between the silicon substrate 1 and the tungsten nitride film 2" (Fig. 1B and col. 9, ll. 38-42). Therefore, Nakajima does not disclose oxidizing a metal compound; rather, it discloses oxidizing a "silicon substrate 1" to form an "oxide film 4." Thus, Nakajima does not disclose Applicants' claimed "forming a metal-

containing insulating film comprising a metal oxide film or a metal silicate film by *oxidizing said metal compound film*” (claim 1, emphasis added). Nakajima does not anticipate claim 1.

Independent claim 1 is therefore allowable, and dependent claims 2 and 4-7 are allowable at least by virtue of their dependence from base claim 1. Therefore, the 35 U.S.C. § 102(b) rejection over claim 1 is improper and should be withdrawn.

**Rejection of Claims 3 and 8-11 under 35 U.S.C. § 103(a):**

Applicants request reconsideration and withdrawal of the rejection of claims 3 and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over Nakajima as applied to claims 1, 2, and 4-6 and further in view of Hu. Applicants respectfully disagree with the Examiner’s arguments and conclusions. A *prima facie* case of obviousness has not been established. As M.P.E.P. § 2142 states, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.”

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142, 8th Ed., Rev. 4 (October 2005), p. 2100-134.

Each of these requirements must “be found in the prior art, and not be based on applicant’s disclosure.” M.P.E.P. § 2143.

A *prima facie* case of obviousness has not been established because, among other things, neither Nakajima nor Hu, nor their combination, teaches or suggests each and every element of Applicants’ claims. Specifically, the first requirement for establishing a *prima facie* case of

obviousness has not been established, because Nakajima and Hu, taken alone or in combination, do not teach or suggest each and every element of Applicants' independent claim 8.

Applicants have already demonstrated in the previous section that Nakajima does not teach or suggest Applicants' claimed "forming a metal-containing insulating film comprising a metal oxide film or a metal silicate film by oxidizing said metal compound film," which is also set forth in claim 8. The Examiner's application of Hu, however, fails to cure the deficiencies of Nakajima already discussed. That is, Hu also fails to teach or suggest at least the above quoted element of independent claim 8. Rather, Hu teaches, at col. 4, ll. 34-37, that "[o]xidizing atmosphere 23 oxidizes exposed surface 22 to form silicon dioxide ( $\text{SiO}_2$ ), thereby forming extensions 24 (shown in phantom) in contact with gate oxide layer 14." Thus, Hu does not teach or suggest "forming a *metal-containing* insulating film ... by oxidizing said metal compound film" (claim 8, emphasis added).

Moreover, Nakajima and Hu also fail to teach or suggest that "each of said first insulating regions is formed in said second insulating region," according to claim 8. The Examiner applied Hu to teach "a plurality of first insulating regions ... (Hu layer 14-crystalline)" and a "second insulating region ... (Hu layer 18 amorphous)" (Office Action, pp. 4-5). Hu, however, does not teach or suggest the above-quoted element of claim 8. Instead, Hu teaches that "[a] layer of silicon-containing material 16 is positioned above the gate oxide layer [14]" (Fig. 1 and col. 3, ll. 57-58), and "[a] diffusion barrier 18 ... is formed over and in contact with (sic) layer of silicon-containing material 16" (col. 3, ll. 62-65). Thus, it is clear that the "gate oxide layer 14" is not formed in the "diffusion barrier 18." Therefore, Hu does not teach that "each of said first insulating regions is formed in said second insulating region," according to claim 8.

In view of the foregoing, Applicants submit that independent claims 1 and 8, and each claim dependent therefrom, is allowable. Accordingly, Applicants request that the 35 U.S.C. § 103(a) rejection be withdrawn.

**Regarding New Claims 21-23:**

In view of the foregoing, Applicants also submit that new claims 21-23 are also allowable, at least by virtue of their dependence from allowable base claim 8.

**Conclusion:**

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the rejections. Pending claims 1, 3, 4, 6-11, and 21-23 are in condition for allowance, and Applicants request a favorable action.

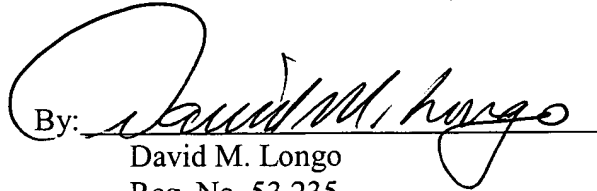
If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: June 21, 2006

By:   
David M. Longo  
Reg. No. 53,235

/direct telephone: (202) 408-4489/